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| 10/705,180      | 11/11/2003  | Daniel P. Vollmer    | 020569-03900        | 4645             |

7590 10/03/2005

John Wilson Jones  
Attn: IP Docketing Clerk  
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| EXAMINER |
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RICHARD, CHARLES R

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| ART UNIT | PAPER NUMBER |
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1712

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/705,180

Applicant(s)

VOLLMER, DANIEL P.

Examiner

C. R. Richard

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/11/03 to 3/7/05</u> .  | 6) <input type="checkbox"/> Other: ____                                     |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The Examiner notes that the IDS filed on 1/24/2005 and the one filed on 3/7/2005 disclose exactly the same references. Applicant may wish to determine if there has been a mistake in the filings such that the earlier IDS was refiled instead of a new one that Applicant intended to file on 3/7/2005.

### ***Specification***

2. The Examiner notes the detailed disclosure on potassium formate solutions in Table III on page 6 of the specification; this information was extremely valuable in examining the claims. No such disclosure is made, however, corresponding to similarly important cesium formate solutions. The Examiner has not been able to locate such data in standard sources or on the Internet, and would appreciate it if Applicant would supply any such data that may be available to allow for more complete comparison of the claims against the prior art.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7-11 and 15-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 (and 8-11 by dependency) recites a cellulosic polymer suspended in something that is not completely defined. For purposes of examination on the merits, it will be assumed that Applicant intended the polymer to be suspended in a solution containing 40% or more alkali formate.

Claims 11 and 15-17 lack proper antecedent basis for the particular cellulosic recited. It may be that Applicant made an error in the dependency indicated.

The steps of claims 18-21 do not indicate "when" the polymer suspension is introduced. Is it before anything else is added to the formation, during drilling, during completion, etc? The preambles suggest that "when" may be important as does the general sense of the specification. Is it? For purposes of examination on the merits, it will be assumed that the "when" is not all that critical. Also, what brine is the preamble referring to anyway? Is it downhole, the one in the suspension or elsewhere? For purposes of examination on the merits, it will be assumed that any brine will suffice.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-10, 12-16 and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Korzilius et al. in US Patent 6,239,081. Korzilius teaches certain drilling fluids.

Drilling fluids taught include potassium formate, especially at 30 to 100% saturation, and other components such as cellulose ethers like hydroxyethyl cellulose and carboxymethyl and carboxymethylhydroxyethyl cellulose (see column 1, line 60 to column 2, line 40). The examples show 50% and 70% solutions of potassium formate and either carboxymethyl and carboxymethylhydroxyethyl cellulose. See Table III at page 6 of the specification for corresponding densities and TCT for these formate solutions.

Note that the recitation concerning 70 deg F in claims 7-10 and 12-16 is taken as a product by process type limitation. In any case, 70 deg F is at or near usual ambient temperature and is not seen as distinguishing.

As to claims 18-21, the introducing step is implied in the uses taught. Note that brines of some sort are naturally occurring in well bores. Also see 112 rejections concerning these claims.

7. Claims 1-2, 4-6, 12-15, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by disclosures by Vollmer et al. on page 98 of Hart's E&P of January 2000 (an article provided by Applicant in the IDS of 11/11/2003). The article concerns HEC precipitation solutions.

Figure 3 shows a data point for a 10.5 ppg potassium formate solution to which hydroxyethyl cellulose has been added. This corresponds to about 40 weight percent potassium formate and a TCT under -28 deg F according to Table III of page 6 of the specification. It is disclosed in the first two paragraphs that these solutions are used in completion and workover.

Note that the recitation concerning 70 deg F in claims 12-15 is taken as a product by process type limitation. In any case, 70 deg F is at or near usual ambient temperature and is not seen as distinguishing.

As to claims 18 and 20, the introducing step is implied in the uses taught. Note that brines of some sort are naturally occurring in well bores. Also see 112 rejections concerning these claims.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-10, 12-16 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke-Sturman et al. in US Patent 4,900,457. Clarke teaches aqueous polysaccharide compositions and methods of using them in drilling.

Clarke's aqueous compositions may comprise a water soluble polysaccharide and 5 to 80 or 120 %w/v of a formate salt (see Abstract and column 2, lines 1-9). The cation of the salt may be potassium or cesium with potassium one of the preferred cations (see column 2, lines 11-17). The polysaccharide may be a cellulose derivative such as hydroxyethyl cellulose (see column 2, lines 17-18); another cellulose derivative mentioned is carboxymethylhydroxyethyl cellulose (see column 1, lines 4-15). The composition may be used as a completion fluid, a workover fluid or a drilling fluid (see column 2, lines 67 to column 3, line 2).

Note that 1% salt solution w/v means 10 g salt /liter of solution (see column 2, lines 34-36). Using the data (at 70 deg F) of Table III at page 6 of the specification, 80%w/v potassium formate is about 57.2 weight percent, has a density of 11.68 ppg and has a TCT of <-30 deg F. Further, 120%w/v potassium formate is right at 76 weight percent which is about 75 weight percent and has a density of 13.17 ppg.

Note that the recitation concerning 70 deg F in claims 7-10 and 12-16 is taken as a product by process type limitation. In any case, 70 deg F is at or near usual ambient temperature and is not seen as distinguishing.

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As to claims 18-21, the introducing step is implied in the uses taught. Note that brines of some sort are naturally occurring in well bores. Also see 112 rejections above concerning these claims.

Although Clarke teaches all of the limitations of the rejected claims in proper context, it does not give a specific example where a cellulosic and an appropriate formate solution are combined. However, from the teachings of Clarke, it would have been obvious to one of ordinary skill in the art to make such combination, thus rendering the rejected claims obvious.

10. Claims 7, 11-12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke-Struman et al. in US Patent 4,900,457 in view of Nimerick et al. in US Patent No. 4,042,529. The teachings of Clarke were discussed in detail above. Nimerick teaches methods of enhancing dispersibility of water soluble polymers.

Clarke teaches all of the limitations of the rejected claims, except for the glycoxal (apparently a misspelling of glyoxal) crosslinking in claims 11 and 17. Note that it was shown above that all the limitations of claims 7 and 12 (the claims from which claims 11 and 17 depend from respectively) are taught by Clarke, and these independent claims are obvious over Clarke alone. As discussed above, Clarke teaches the use of a variety of cellulose derivatives including hydroxyethyl cellulose.

Nimerick discusses the use crosslinking of viscosifiers such as hydroxyl containing cellulose ethers with glyoxal to avoid agglomeration upon subsequent dispersal in aqueous solution (see Nimerick at column 1, lines 5-25) – more or less the



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stated, desired result in the present invention. The context of Nimerick is oil field applications. (see Nimerick Background and Summary).

Thus, it would have been obvious to one of ordinary skill in the art to use a glycoxal crosslinked hydroxyethyl cellulose as described in Nimerick in the compositions of Clarke, thus rendering the rejected claims obvious.

11. Claims 1-2, 4, 6-8, 12-14 and 18-21 are rejected under 35 U.S.C. 103(a) as being obvious over Chesser et al. in US Patent 6,993,262. Chesser discloses a precursor polymer dispersion in a brine for addition to another brine for use in drilling and completion operations (see Abstract).

The salt in the first brine may be potassium or cesium formate (see column 2, lines 47-60). The polymer may be a cellulose or a cellulose derivative (see column 3, lines 1-5). The initial brine is preferably at a density of 11-13 ppg (see column 3, lines 40-50). Table III on page 6 of the specification shows that 11 ppg potassium formate is about 47.5 weight percent and has a TCT of less than -30 deg F; 13 ppg would be about 73.8 weight percent potassium formate and would have a TCT of about 11.3 deg F.

Note that the recitation concerning 70 deg F in claims 7-8 and 12-14 is taken as a product by process type limitation. In any case, 70 deg F is at or near usual ambient temperature and is not seen as distinguishing.

As to claims 18-21, the introducing step is implied in the uses taught. Note that brines of some sort are naturally occurring in well bores, and of course, the second

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brine discussed above could easily be downhole. Also see 112 rejections concerning these claims.

Although Chesser teaches all of the limitations of the rejected claims in proper context, it does not give a specific example where a cellulosic and an appropriate formate solution are combined. However, from the teachings of Chesser, it would have been obvious to one of ordinary skill in the art to make such combination, thus rendering the rejected claims obvious.

In addition or in the alternative as to claims 18-21, there is no specific teaching as to a brine present downhole apart from the cellulose suspension in the context of claims 18-21. Chesser does teach the existence of a second brine, to which the first containing the cellulose is added, as was stated above; this second brine could be anywhere. It is of note that it is common practice in the art to add thickeners in the process of drilling or performing other well operations as needed. The second brine could be downhole and naturally occurring or placed there, of course. It would thus have been obvious to one of ordinary skill in the art that the first brine containing the cellulose could be added to a second brine downhole which would then be thickened. Claims 18-21 are thus rendered obvious.

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

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1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 7-12, 14-17 and 19-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3-6 and 13 of copending Application No. 10/911,038. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 3 of 10/911,038 recites all of the limitations of rejected claims 7 and 12, except for the specific alkali formate. Claim 6 of 10/911,038 supplies this specific element in the same context. It would have been obvious for one of ordinary skill in the art to use the specific formates from claim 6 of the reference when making the materials of claim 3 of the reference as a specific formate must be chosen (and these are the only specifics taught by the reference's claims), thus producing materials according to rejected claims 7 and 12 and rendering them obvious.

Similarly, claim 3 of 10/911,038 recites all of the limitations of rejected claims 8-11 and 14-17, except for the specific formates and cellulose. The formates are taught in claim 6 of the reference and the cellulose is taught in claims 4 and/or 5 of the reference. It would have been obvious to one of ordinary skill in the art to use the formates of claim 6 of the reference and the cellulose of claims 4 and/or 5 of the reference when making the materials of claim 3 as specific formates and cellulose

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must chosen (and these are the only specifics taught by the reference's claims), thus producing materials according to rejected claims 8-11 and 14-17 and rendering them obvious.

As to rejected claims 19 and 20, the suspensions recited (from rejected claims 7 and 12) have been shown obvious over the combination of claims 3 and 6 of 10/911,038 above. The method steps of rejected claims 19 and 20 are given in claim 13 of the reference. It would have been obvious to one of ordinary skill in the art to use suspensions taught by combining claims 3 and 6 of the reference (and hence within the scope of rejected claims 7 and 12) in the method of claim 13 of the reference, because specific formates and cellulosics must be chosen to practice the method and they are supplied by the claims 3 and 6 in the reference and thus suggested for use. Thus rejected claims 19 and 20 are rendered obvious.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. The following are of particular interest: US Patents Nos. 5,641,728; 5,785,747; 6,124,244; 6,248,700 and 6,746,992. Also of note are US Patent Nos. 5,514,644; 5,597,783; 5,635,458; 6,107,856; 6,100,222; 6,194,355; 6,432,802; 6,631,764 and 6,894,008, as well as US Patent Application Publication Nos. 2002/0160919 and 2004/0152604.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. R. Richard whose telephone number is 571-272-8502. The examiner can normally be reached on M-Th, 8am-6pm and alternate Fridays, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*CR Richard*

  
**PHILIP TUCKER**  
**PRIMARY EXAMINER**  
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